

ABSTRACT OF THE DISCLOSURE

5 A method of preventing oxygen deficiency in a ferroelectric or high  $\epsilon$  film material having a top electrode layer deposited thereon. Process conditions are employed that either enable the top electrode layer to be formed without oxygen abstraction from the ferroelectric or high  $\epsilon$  film material in the vicinity and at the top surface thereof, or else provide the ferroelectric or high  $\epsilon$  film material in the vicinity and at the top surface thereof with a surplus of oxygen. In the latter case, the deposition formation of the top electrode layer on the ferroelectric or high  $\epsilon$  film material depletes the over-stoichiometric excess of the oxygen in the film material, to yield a device structure including an electrode on a film material having a proper stoichiometry, e.g., of  $\text{PbZrTiO}_3$ .